Space Nutrition

Volume 1 | Bone Food | Issue #1

Bone Facts

By the time you are 20 years old, your bones will have almost finished growing (for the rest of your life!). Getting enough calcium and other bone-related nutrients in your teens is critical for preventing bone problems later in life.

Food Facts

You can build healthy bones by eating a well-balanced diet. Milk and dairy foods like cheese and yogurt are especially good sources of Vitamin D, calcium and phosphorus. Use the USDA's Food Guide Pyramid to help you rate your eating habits.

You can find the pyramid at
www.nal.usda.gov/fnic/Fpyr/pyramid.html

Nutrition is the study of how the body uses nutrients – like calories, vitamins, and minerals – and of how much of each nutrient the body needs. While good nutrition is important for everybody, NASA's scientists at the Nutritional Biochemistry Laboratory look at how astronauts' nutrient needs are affected by space flight. One area that is very important is the role of nutrition in keeping bones healthy during space flight.

Science Facts

Many nutrients are important for keeping bones healthy. Here are just a few:

Calcium - Since 99% of the body's calcium is stored in bone, you need to eat the right amount of calcium for healthy bones.

Vitamin D - Children need Vitamin D to make their bones grow, and adults need it to keep their bones healthy.

Vitamin K - Important for making bone proteins.

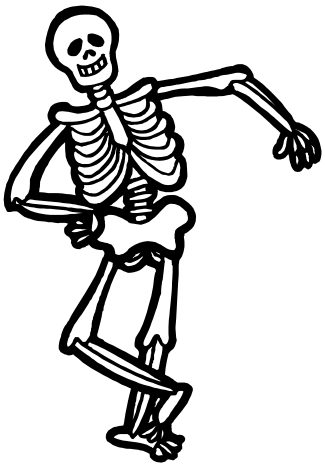
Protein - Eating the right amount of protein is critical for strong bones.

Phosphorus - Important for making bone mineral.

Sodium - Eating too much sodium may make you lose calcium from your bones.

Did you know?

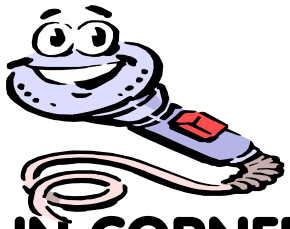
- Astronauts lose bone during space flight. This is especially significant for long missions.
- Not eating enough calcium and vitamin D can result in weak bones which are more easily broken.
- Osteoporosis is a bone disease on Earth that is very similar to the bone loss we see during space flight.
- People in wheelchairs also lose bone mass.
- Understanding (and stopping) bone loss during space flight may help us to fight bone diseases on Earth.



Word of the Month

Mineralization

Can you guess what this word means? Look for the meaning of the "word of the month" in the next issue of Space Nutrition



FUN CORNER

Find these space nutrition words:

Phosphorus	**Vitamins**
Bones	**NASA**
Calcium	**Sodium**
Diet	**Skeleton**
Space	**Milk**
Soy	**Mars**

P	B	T	E	I	D	Z	F
H	K	M	A	R	S	V	U
O	L	G	C	E	S	I	W
S	I	S	N	S	K	T	C
P	M	O	O	P	E	A	V
H	B	Y	I	A	L	M	E
O	H	A	T	C	E	I	M
R	Q	I	I	E	T	N	S
U	S	U	R	R	O	S	N
S	M	J	T	K	N	N	A
C	T	M	U	I	D	O	S
P	Y	X	N	L	D	O	A

For more information, log on to the Nutritional Biochemistry Laboratory's website at
www.jsc.nasa.gov/sa/sd/facility/nutrition.htm

In the next issue - we will continue to investigate bones, space flight, and nutrition and also learn some of the ways that NASA research can help us understand bone diseases on Earth.